

HETEROJUNCTION BIPOLAR TRANSISTOR WITH InGaAs
CONTACT AND ETCH STOP LAYER FOR InP SUB-COLLECTOR

ABSTRACT OF THE DISCLOSURE

5 A thin InGaAs contact layer is provided for the
collector of a heterojunction bipolar transistor (HBT)
above an InP sub-collector. The contact layer provides a
low resistance contact mechanism and a high thermal
conductivity path for removing device heat through the
10 sub-collector, and also serves as an etch stop to protect
the sub-collector during device fabrication. A portion of
the sub-collector lateral to the remainder of the HBT is
rendered electrically insulative, preferably by an ion
implant, to provide electrical isolation for the device
15 and improve its planarity by avoiding etching through the
sub-collector.